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WASHINGTON UNIVERSITY

Department of Psychology

**ETHNIC IDENTITY, EATING DISORDER SYMPTOMS,
AND PERFECTIONISM IN A MULTI-ETHNIC SAMPLE
OF WOMEN AT HIGH-RISK FOR EATING DISORDERS**

by

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A thesis presented to the
Graduate School of Arts and Sciences
of Washington University
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III. INTRODUCTION

Eating disorders (EDs) are serious illnesses that affect individuals from a variety of ethnic backgrounds (Alegria et al., 2007; Nicdao, Hong, & Takeuchi, 2007; J. Y. Taylor, Caldwell, Baser, Faison, & Jackson, 2007), and are associated with significant morbidity, reduced quality of life, and impaired social functioning (Hudson, Hiripi, Pope Jr, & Kessler, 2007). To reduce the harmful impact of EDs, prevention programs have been developed that attempt to reduce symptom progression and prevent ED onset via manipulation of specific modifiable risk factors. However, to date, EDs have been studied in predominantly Caucasian samples (Alegria, et al., 2007; Bardone-Cone, Weishuhn, & Boyd, 2009; J. Y. Taylor, et al., 2007), even though prevalence among ethnic minorities is rising (Alegria, et al., 2007; Bardone-Cone, et al., 2009; Shrake & Rhee, 2004; J. Y. Taylor, et al., 2007). Thus, it is unclear whether current risk factor models and prevention programs can be effectively extended to ethnic minority populations.

Perfectionism and attitudinal and behavioral ED symptoms (e.g., overconcern with weight/shape, dietary restraint) have been identified as risk factors for the onset and maintenance of full-syndrome clinical EDs (Bardone-Cone et al., 2007; Jacobi et al., 2011; Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004; Stice, 2002) and have been targeted in ED prevention programs (Stice, Shaw, & Marti, 2007; C. B. Taylor et al., 2006). Evidence indicates that perfectionism may be a salient risk factor for eating and weight problems among college women (Bardone-Cone, et al., 2009; Jacobi, et al., 2011) and ethnic minorities (Bardone-Cone, et al., 2009; Chan & Owens, 2006). However, few studies to date have examined the role of ethnicity-related factors (e.g., ethnic identity)

relevant to college women in attenuation or exacerbation of risk factors for ED symptoms.

Ethnic identity is a multidimensional construct representing one's sense of belonging, affirmation, and commitment to an ethnic group, as well as one's exploration of that group's traditions and customs (Phinney, 1992). Previous findings suggest that ethnic identity is associated with greater psychological well-being and self-esteem across ethnic groups, suggesting that a high ethnic identity may be protective against negative psychological outcomes (Phinney, 1990; Phinney & Cantu, 1997; Shrake & Rhee, 2004). However, research indicates that the association between ethnic identity and EDs may differ based on the ethnic group under consideration (Bettendorf & Fischer, 2009; Cachelin, Phinney, Schug, & Striegel-Moore, 2006; Petersons, Rojhani, Steinhaus, & Larkin, 2000; Phan & Tylka, 2006; Tsai, Curbow, & Heinberg, 2003).

In Asian and Asian-American women, higher ethnic identity has been found to be positively associated with ED symptoms (Phan & Tylka, 2006; Tsai, et al., 2003), and one study found that ED risk factors, specifically pressure for thinness and body preoccupation, were more strongly correlated at higher levels of ethnic identity (Phan & Tylka, 2006). Conversely, in Mexican-American women, ethnic identity has been found to be negatively associated with ED symptoms, and one study found that acculturation and restricted eating were less strongly correlated at high levels of ethnic identity (Cachelin, et al., 2006). Furthermore, in African-American women, the association between watching TV shows with predominantly white casts and negative thoughts about one's own body was weaker among women with a higher ethnic identity (Schooler, Ward, Merriwether, & Caruthers, 2004). Thus, the literature suggests that higher ethnic

identity is associated with higher levels of ED symptoms in Asian/Asian-American women and with lower levels of ED symptoms in Latina and African-American women. Notably, ethnic identity has been identified as a moderator of the association between ED symptoms and other variables in all three of these ethnic groups.

To date, no studies have examined the associations among ethnic identity, perfectionism, and disordered eating in a multi-ethnic sample of women. Furthermore, no studies of ethnic identity have focused exclusively on women at high-risk for ED onset. The current study seeks to fill these gaps in the literature by examining the effect of ethnic identity on the association between perfectionism and eating disorder symptoms in a multi-ethnic sample of high-risk college-aged women. Informed by previous reports, we hypothesize that ethnic identity will reduce this association in Latina and African-American women and will augment this association in Asian/Asian-American women.

IV. METHODS

Participants

Participants were 374 college-aged women from universities in St. Louis, the San Francisco Bay Area, and Sacramento, California. 55.1% of participants identified as Caucasian (n=206), 18.7% as Asian/Asian-American (n=70), 9.6% as Black/African-American (n=36), 9.9% as Hispanic or Latina (n=37), and 6.7% as Mixed or Other (n=25).

Participants were categorized as high-risk based on the endorsement of at least one risk factor. All participants scored ≥ 47 on the Weight and Shape Concerns Scale (Killen et al., 1996), or endorsed a moderate to strong fear of gaining 3 lbs, or endorsed a high importance of weight. A subset of participants (55%; n=206) endorsed at least one

additional risk factor (history of depression; teasing from a teacher, sibling, or coach; low level compensatory behaviors).

Procedure

Participants were recruited as part of a randomized-controlled trial of an Internet-based eating disorder prevention program. Data for this study are from the in-person baseline assessment battery that included self-report questionnaires and clinical interviews conducted by trained research assistants. Participant height and weight were measured three times each and their averages recorded. Each site's institutional review board approved all study procedures.

Measures

The Ethnic Identity subscale of the Multigroup Ethnic Identity Measure (EI; Phinney, 1992) is a

12-item scale that measures two components of ethnic identity: (1) sense of affirmation, belonging, and commitment; and (2) ethnic identity search and exploration; $\alpha=0.91$.

Higher scores indicate higher levels of ethnic identity. One question asks participants to indicate their ethnicity.

The Eating Disorder Examination Questionnaire (Fairburn & Beglin, 1994) is a 39-item scale

that assesses ED pathology. The global score (EDE-Q Global) was used in analyses; $\alpha=0.90$.

The Eating Disorders Inventory *Drive for Thinness* and *Perfectionism* subscales (Garner,

Olmstead, & Polivy, 1983) measure the importance of the pursuit of thinness and meeting high standards, respectively. *Drive for Thinness* (EDI-dt) $\alpha=0.74$ and *Perfectionism* (EDI-p) $\alpha=0.86$.

Body Mass Index (kg/m^2 ; BMI) was calculated from height and weight measurements taken at baseline.

Analyses

Ethnic group differences in all covariates, predictors, and criterion variables were examined using a one-way ANOVA and Tukey post-hoc comparisons. A single hierarchical regression model was developed for each dependent variable (EDI-dt and EDE-Q Global), with ethnicity (black/African-American, Hispanic/Latina, Asian/Asian-American, Caucasian) coded as a group of dummy variables with Asian/Asian-Americans as the reference group. This reference group was chosen because studies have found ethnic identity to strengthen the associations between disordered eating and other variables only in Asian/Asian-Americans, while the opposite has been found in African-Americans and Latinas. All continuous variables were standardized prior to analyses in order to reduce multicollinearity.

Main effects (EDI-p, EI, ethnicity dummy variables) were entered in step 1, covariates (highest education of guardian, BMI) in step 2, two-way interactions in step 3, and three-way interactions in step 4. The final model excluded insignificant main effects and interactions not relevant to the three-way interactions specified in step 4 to evaluate the a-priori hypothesis previously specified. Significance was set at $p < 0.05$.

V. RESULTS

Baseline characteristics

Table 1 shows mean differences among ethnic groups. Latina participants reported a significantly lower education level for parents/guardians than all other groups, except Mixed/Other (all $p < 0.05$). African-American participants had a significantly higher BMI than Asian/Asian-American ($p < 0.001$) and Caucasian women ($p < 0.01$).

Caucasian participants scored significantly lower than all other ethnic groups on EI (all $p < 0.001$).

Regression analyses

Analyses indicated a significant three-way interaction among Latina ethnicity, level of ethnic identity, and EDI-p to predict EDI-dt scores ($p < 0.05$) (Table 2). Among Latinas, EI attenuated the association between EDI-p and EDI-dt (Figure 1), such that perfectionism and drive for thinness were less strongly correlated in women with a higher ethnic identity. In Asians/Asian-Americans, EI intensified this association, such that perfectionism and drive for thinness were more strongly correlated in women with a higher ethnic identity (Figure 2).

Regression analyses also indicated a main effect inverse relationship between EI and EDE-Q Global scores only in Caucasian women ($p < 0.05$), such that higher levels of ethnic identity were associated with lower levels of disordered eating (Table 3).

No significant results were found for black/African-American participants.

VI. DISCUSSION AND FUTURE DIRECTIONS

Previous research suggests some role for ethnic identity in risk for EDs (Bettendorf & Fischer, 2009; Cachelin, et al., 2006; Phan & Tylka, 2006; Schooler, et al., 2004; Tsai, et al., 2003). The current study extended this work to examine the associations among ethnic identity, eating disorder symptoms, and perfectionism in a diverse sample of college-aged women at high-risk for ED onset. In support of study hypotheses, high identification with a Latin culture weakened the association between perfectionism and drive for thinness, while high identification with an Asian culture intensified this association. These results provide evidence that ethnic identity is relevant

to understanding the association between ED symptoms and perfectionism particularly among Latina and Asian/Asian-American women.

Study findings are in line with previous studies in which ethnic identity attenuated the association between disordered eating and acculturation in Mexican-American women (Bettendorf & Fischer, 2009), and enhanced the association between disordered eating and pressure for thinness in Asian/Asian-American women (Bettendorf & Fischer, 2009; Cachelin, et al., 2006; Phan & Tylka, 2006; Tsai, et al., 2003). Studies from this emerging area of research suggest that different processes related to ethnic identity may be important to understanding the effect of perfectionism on risk for EDs in terms of subjective norms (Fishbein & Ajzen, 1975) unique to specific ethnic groups.

Findings pertaining to Asian and Asian-American women may reflect a broader focus on collectivism in some Asian cultures. Collectivism stresses that individuals should behave in ways that positively represent their family and community (Phan & Tylka, 2006; Tsai, et al., 2003). Women with a higher ethnic identity and higher levels of perfectionism may be more prone to pursuing thinness because they may view their weight and shape as reflecting on their community. Furthermore, Asian and Asian-American women have a more petite reference group; therefore, women with a high ethnic identity may experience a desire to conform to the dominant body type of their culture, which may influence their pursuit of thinness (Neumark-Sztainer et al., 2002; Phan & Tylka, 2006; Tsai, et al., 2003).

In contrast, the greater acceptance of diverse body types and non-restrictive eating in the Latin community may contribute to the current findings in Latina women. In addition, the Latina community may place limited focus on body weight and shape as a

marker of beauty (Bettendorf & Fischer, 2009; Cachelin, et al., 2006). Thus, Latina women with a higher ethnic identity may not be as likely to excessively pursue thinness in response to higher levels of perfectionism.

Ethnic identity was also found to have a main effect inverse association with ED symptoms in Caucasian women. This finding is contrary to findings from Petersons and colleagues (2000), who found that high ethnic identity was positively associated with drive for thinness, bulimic behaviors, and body dissatisfaction in Caucasian women. Findings from the current study may reflect the exclusive focus on high-risk college women, who had higher average levels of pathology as compared to previous studies. It may be that at higher levels of risk, ethnic identity and disordered eating are negatively correlated, while the opposite is true at lower levels of risk. Examining the associations among risk status, ethnic identity, and ED symptoms may be an important area of study.

Contrary to hypothesis, no significant associations among ethnic identity, perfectionism, and ED symptoms were observed among African-American women. Petersons et al (2000) also failed to find a significant association between ethnic identity and disordered eating in African-American women. It should be noted that Petersons and colleagues (2000) suggested that these non-significant associations may reflect low variability in ethnic identity scores among African-American participants, but this explanation is unlikely to explain the findings in this study as variability in ethnic identity scores were comparable among ethnic groups. Instead, it may be that for African-American women, disordered eating is related to cultural factors other than ethnic identity, such as assimilation (i.e., adoption of dominant cultural attitudes and behaviors) or media exposure (Schooler, et al., 2004).

Limitations of this study include the relatively small sample size of each non-white ethnic group, and the aggregation of some ethnic groups in analyses (e.g., Chinese and Japanese). While this method may have improved statistical power, it may have obscured subtle differences between specific ethnic groups. Furthermore, this study included only college-aged women at high-risk for eating disorder onset, limiting generalizability of our findings to other population groups. Another limitation includes the cross-sectional nature of this study, which does not allow for causal inference. It is possible that, for instance, improving ethnic identity among Latinas with high weight/shape concern and perfectionism scores may decrease their risk for eating disorders, but this must be tested experimentally. A next step for researchers may be to include measures of ethnic identity in future studies and to develop and evaluate intervention programs that are adapted for specific ethnic groups.

This is the first study to examine associations among ethnic identity, perfectionism, and ED symptoms. The current study provides evidence that ethnic identity is relevant to understanding disordered eating in women from diverse ethnic backgrounds, and suggests that addressing ethnic and cultural issues, particularly among Asian/Asian-American and Latina women, is relevant to both researchers and clinicians. Addressing ethnic identity could enable the development of personalized prevention and treatment approaches by, for example, helping Latina women reinforce protective cultural factors. Clinicians and investigators should remain aware that individualistic Western cultural processes may not singly influence eating disorder risk, but rather that a number of culturally-specific factors may interact to impact risk for EDs in distinct ways.

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VIII. TABLES & FIGURES

Table 1. Baseline characteristics

Ethnicity	Asian/Asian-American	Black/African-American	Latina/Hispanic	White/Caucasian	Mixed/other
% (N)	18.7 (70)	9.6 (36)	9.9 (37)	55.1 (206)	6.7 (25)
Highest education of guardian	4.44 (1.46)	4.47 (1.42)	3.51 (1.82)	4.85 (1.31)	4.28 (1.60)
BMI	23.05 (4.26)	28.40 (6.14)	25.91 (5.72)	25.02 (5.63)	25.06 (7.15)
EI	2.92 (0.54)	2.98 (0.51)	3.10 (0.50)	2.49 (0.59)	2.85 (0.75)
BDI	11.41 (8.04)	11.87 (10.00)	10.35 (9.32)	8.71 (7.73)	9.38 (8.04)
EDI-p	4.35 (1.14)	4.44 (0.95)	4.07 (1.16)	4.05 (1.17)	4.31 (1.04)
EDI-dt	3.65 (0.93)	3.65 (1.12)	3.67 (0.82)	3.48 (0.90)	3.65 (0.83)
EDE-Q Global	9.26 (3.53)	9.35 (4.48)	9.65 (3.47)	8.85 (3.92)	9.45 (4.14)

Note: For all variables $M(SD)$; BMI = Body Mass Index; EI = ethnic identity; BDI = Beck Depression Inventory; EDI-p = Eating Disorders Inventory Perfectionism subscale; EDI-dt = Eating Disorders Inventory Drive for Thinness subscale; EDE-Q Global = Eating Disorder Examination-Questionnaire Global score

Table 2. Hierarchical regression model

Step 1	Final B	SE_B	Final β	Cum. R²	Adj. R²	ΔR^2	Overall F(6, 255)
MEIM	-.411*	.178	-.419*	.101	.080	--	4.767**
EDI-p	.160	.137	.158				
Step 2	Final B	SE_B	Final β	Cum. R²	Adj. R²	ΔR^2	Overall F(8, 253)
Highest Ed of guardian	-.095*	.042	-.142*	.118	.090	.017	4.238**
BMI	.007	.011	.041				
Step 3^a				Cum. R²	Adj. R²	ΔR^2	Overall F(17, 244)
(black, white, latina, other)xMEIM				.169	.111	.051	2.918**
(black, white, latina, other)xEDI-p							
MEIMxEDI-p							
Step 4^a	Final B	SE_B	Final β	Cum. R²	Adj. R²	ΔR^2	Overall F(21, 240)
blackxMEIMxEDI-p	.211	.330	.054	.197	.127	.028	2.809**
whitexMEIMxEDI-p	-.306	.206	-.219				
latinaxMEIMxEDI-p	-.709*	.321	-.251*				
otherxMEIMxEDI-p	-.359	.266	-.115				

*p<0.05 **p<0.001

^aAsian/Asian-American used as reference group

BMI = Body Mass Index; EI = ethnic identity; BDI = Beck Depression Inventory; EDI-p = Eating Disorders Inventory Perfectionism subscale; EDI-dt = Eating Disorders Inventory Drive for Thinness subscale; EDE-Q Global = Eating Disorder Examination-Questionnaire Global score

Table 3. Main effect of EI to predict EDE-Q global scores

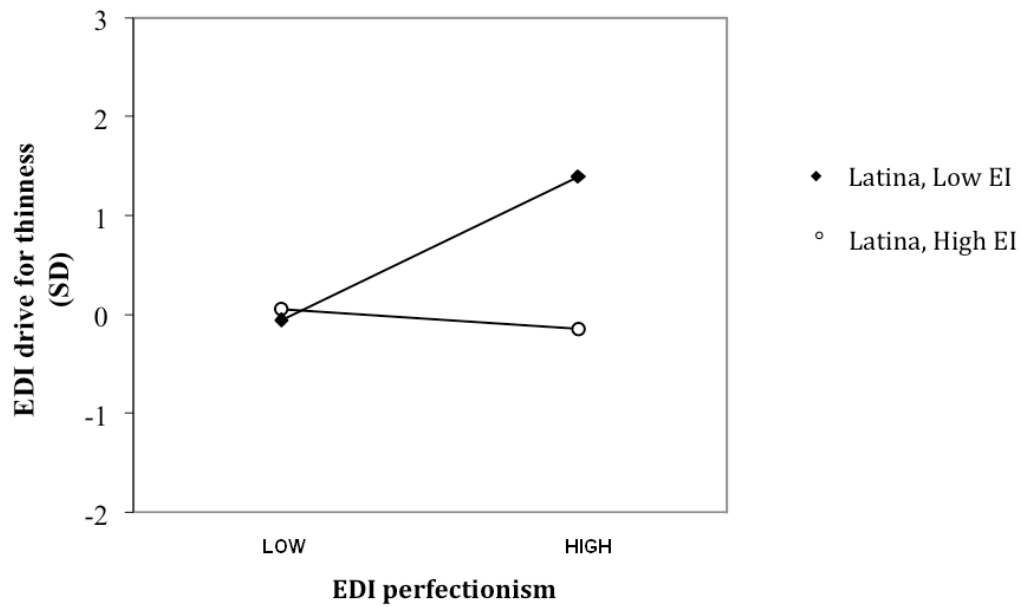
Model	B	Std. Error	Beta	t	Sig.	Correlations		
						Zero- order	Partial	Part
(Constant)	.503	.347		1.450	.150			
EI	-.204	.093	-.193	- 2.199	.030*	-.165	-.192	-.190
Highest Ed of guardian	-.089	.069	-.115	- 1.290	.199	-.112	-.114	-.112
BMI	.114	.090	.112	1.268	.207	.113	.112	.110

*p<0.05

Selecting only cases for which Ethnicity= white/Caucasian

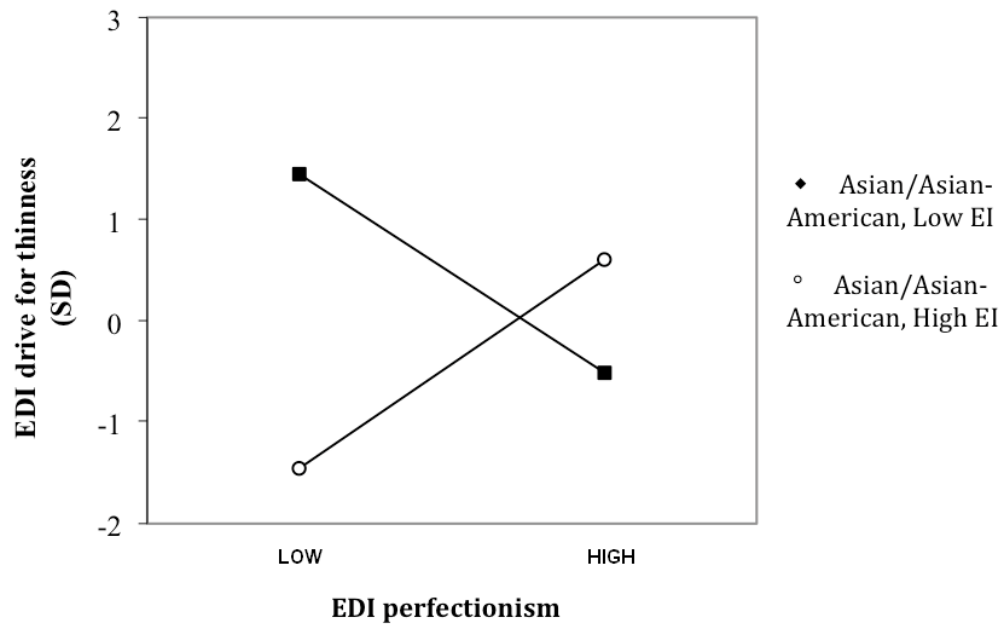
EI = Ethnic Identity; BMI = Body Mass Index

Figure 1. 3-way interaction: Latina



For Latinas with a high ethnic identity (EI), the association between perfectionism and drive for thinness is lesser than for Latinas with a low EI.

Figure 2. 3-way interaction: Asian/Asian-American



For Asian/Asian-American women with a high ethnic identity (EI), the relationship between perfectionism and drive for thinness is stronger than for women with a low EI.